

SOLD



Dart Aerospace Ltd.
1270 Aberdeen St
Hawkesbury, ON
K6A 1K7
Canada

Tel (613) 632-5200

D4776-3

Job Sheet 172512



Part No: D4776-3

Job Qty: 20 ea

Part Name: Skidtube Clevis



Part Weight: 0 lbs

Status: Scheduled

Priority: Medium

Job Created: 2/20/18

Job Tracking No:

Due Date: 3/2/18

Created By: Logan David

Type: SOLD

Description:

Note: DWG REV D SHEET 2 IPP REV A: NEW ISSUE JFS 13/03/07 VERIFY BY: JLM IPP REV:B 13.09.26 AS PER REV.B DD VERF:JLM IPP REV:C AS PER REV. PC1 JFS 13/11/07 VERIFY BY: JLM

Ship Via:

Bill of Materials

Job Routing

Op No	Operation	Qty	Start Date	Due Date	Standard		Workcenter/Supplier		Sign-off
					Setup hrs	Run Hrs	Workcenter / Supplier	Lead Time	
90	Start up Operation	20 Ea	3/1/18	3/1/18	0.00	0.00	Start Up Machining-3		Mmm L 18/03/18
100	Bandsaw	20 pcs	3/1/18	3/1/18	0.00	0.36	Bandsaw1		11
110	CNC Vertical Machining	20 pcs	3/1/18	3/1/18	0.26	17.39	HAAS1-5		11
120	QC	20 pcs	3/1/18	3/1/18	0.00	0.00	QC2 Machining-3		DAG
130	QC	20 pcs	3/1/18	3/1/18	0.00	0.00	QC8 Machining-3		38
140	HandFinish	20 pcs	3/1/18	3/1/18	0.00	0.53	HandFinish1		SA 18-03-27
150	QC	20 pcs	3/1/18	3/1/18	0.00	0.00	QC7-4		BR 18-3-07
160	Powdercoat	20 pcs	3/2/18	3/2/18	0.00	0.24	Powdercoat1		BR 18-3-07
170	QC	20 pcs	3/2/18	3/2/18	0.00	0.00	QC3		DAG 11 MAR 27 2018
180	Packaging	20 pcs	3/2/18	3/2/18	0.00	0.00	Packaging3-2	54115	11 MAR 27 2018
190	QC21-SA	20 Ea	3/2/18	3/2/18	0.00	0.00	QC21		Chm 18/03/27

Part Op 100 - Cut Blank at 4.400"

Descriptions: 110 - 1-Machine per folio FB168

160 - START TIME: 10:05 00.71300° FINISH: 11:05

M138760.

DAG
21
9-80

MAR 27 2018

Job BOM

Part / Item	Component Name	Quantity	Operation	Container
M6061T6B2.500X01.500	6061-T6 Bar 2.50 X 1.50	7.3400 ft (.367 ea)	90-Start up Operation	

Job Allocations

Operation	Component Part	Required	Inventory	Allocated
90-Start up Operation	M6061T6B2.500X01.500	7	13	0

DQA: _____ Date: _____

WORK ORDER NON-CONFORMANCE / UPDATE



QA Closed: _____ Date: _____

Work Order update only ☐

Work Order: _____		DISPOSITION		AGAINST DEPARTMENT/PROCESS	
Part No. _____		Rework ☐	Skid-tube ☐	Cross tube ☐	Water Jet ☐
NCR No. _____		Scrap ☐	Machining ☐	Small Esh ☐	Engineering ☐
		Use-as-is ☐	Thermoform ☐		ality ☐
		Suspected Unapproved ☐	Large ☐		her ☐
Date : _____	Step #: _____	QTY E: _____		Approval _____	
Description Work Order Deviation				d By _____	
				Supervisor _____	
				fication _____	
				inator _____	
				ong _____	
				isions _____	
				lerance _____	
				ng _____	
				Part: D4776-3	
				Job No: 172512	
				Serial No/Batch: S055023	
				Revision: _____	
				Inspector: _____	
				Date: 03/28/18	
				Container No: S055023	
				DART Aerospace	
				1414 American Street	
				Hawkebury, ON K8A 1K7	
				TEL: 1 813 632-5200	
				Email: sales@dartaero.com	
				www.dartaero.com	

Root Cause			
Environment	☐	No Re-verification	☐
Design	☐	Operator	☐
Doc/Data	☐	Offset/Setup	☐
Equip/Tooling	☐	Supplier	☐
Handling/Pre	☐	Training	☐
Material	☐	Use for Testing	☐
Internal Transport	☐	Poor Information	☐
Tribal Knowledge	☐	Rushing	☐
LOA	☐	Product Improvement	☐
Substation	☐	Process Improvement	☐
Past Expiry Date	☐	Manufacturing Process	☐
Misidentified	☐	Past Due	☐
		Pressure/Forced	☐
		Bending	☐
		Centre Not Concentric	☐
		Cracks	☐
		Crimp/Kink/Ripple/Wave	☐
		Cuffs	☐
		Crushing	☐
		Heat Treat	☐
		Wave/Twist in Tube	☐
		Marks/Chatter	☐
		Temperature/Cure	☐
		Set-up	☐
		BOM/Route	☐
		Broken/Damage/D	☐
		Inspection Incomp	☐
		Contamination	☐
		Countersink	☐
		Cut Too Short	☐
		Instructions Incomp	☐
		Drill Holes	☐
OTHER : _____			

Part Specifications					
Spec No	Description	Target/Tolerance	Limits	Type	Special Comments
1	Skidtube Clevis	4.250Inches ± 0.030	4.280 4.220		
2	Skidtube Clevis	2.250Inches ± 0.030	2.280 2.220		
3	Skidtube Clevis	1.688Inches ± 0.010	1.698 1.678		
4	Skidtube Clevis	0.880Inches ± 0.030	0.910 0.850		
5	Skidtube Clevis	0.510Inches ± 0.010 + 0.010 - 0.000	0.520 0.510		
6	Skidtube Clevis	1.063Inches ± 0.010	1.073 1.053		
7	Skidtube Clevis	1.380Inches ± 0.030	1.410 1.350		
8	Skidtube Clevis	0.190Inches ± 0.030	0.220 0.160		
9	Skidtube Clevis	1.000Inches ± 0.030	1.030 0.970		
10	Skidtube Clevis	0.484Inches ± 0.006 + 0.006 - 0.001	0.490 0.483	Diameter	
11	Skidtube Clevis	0.500Inches ± 0.030	0.530 0.470		
12	Skidtube Clevis	0.550Inches ± 0.030	0.580 0.520		
13	Skidtube Clevis	3.150Inches ± 0.010	3.160 3.140		
14	Skidtube Clevis	1.130Inches ± 0.030	1.160 1.100		
15	Skidtube Clevis	0.688Inches ± 0.010	0.698 0.678		
16	Skidtube Clevis	0.397Inches ± 0.006 + 0.006 - 0.001	0.403 0.396	Diameter	
17	Skidtube Clevis	1.813Inches ± 0.010	1.823 1.803		
18	Skidtube Clevis	0.190Inches ± 0.030	0.220 0.160	Radius	
19	Skidtube Clevis	0.130Inches ± 0.030	0.160 0.100	Radius	
20	Skidtube Clevis	0.440Inches ± 0.030	0.470 0.410	Radius	
21	Skidtube Clevis	0.125Inches ± 0.010	0.135 0.115		
22	Skidtube Clevis	0.380Inches ± 0.030	0.410 0.350		
23	Skidtube Clevis	0.750Inches ± 0.030	0.780 0.720		
24	Skidtube Clevis	0.250Inches ± 0.030	0.280 0.220	Radius	

Plex 2/20/18 10:45 AM dart.logan.david

DQA: _____ Date: _____



WORK ORDER NON-CONFORMANCE / UPDATE

QA Closed: _____ Date: _____

Work Order update only ☐

Work Order: _____ Part No. _____ NCR No. _____	DISPOSITION Rework ☐ Scrap ☐ Use-as-is ☐ Suspected Unapproved ☐	AGAINST DEPARTMENT/PROCESS Skid-tube ☐ Machining ☐ Thermoforming ☐ Large Fab ☐ Cross tube ☐ Small Fab ☐ Finishing ☐ Composite ☐ Water Jet ☐ Prod. Eng. Coord. ☐ Rec/Store/Packaging ☐ Supplier ☐ Engineering ☐ Quality ☐ Other ☐			
Date :	Step #:	QTY Effective :		MRB (QSI042) Approval	
Description Work Order Deviation		Disposition		Completed By	
				Lead hand / Supervisor Approval Verification	
				QC / QA Coordinator Approval	
Root Cause		FAULT CATEGORY			
Environment ☐ Design ☐ Doc/Data ☐ Equip/Tooling ☐ Handling/Pre ☐ Material ☐ Internal Transport ☐ Tribal Knowledge ☐ LOA ☐ Substation ☐ Past Expiry Date ☐ Misidentified ☐	No Re-verification ☐ Operator ☐ Offset/Setup ☐ Supplier ☐ Training ☐ Use for Testing ☐ Poor Information ☐ Rushing ☐ Product Improvement ☐ Process Improvement ☐ Manufacturing Process ☐ Past Due ☐	Pressure/Forced ☐ Bending ☐ Centre Not Concentric ☐ Cracks ☐ Crimp/Kink/Ripple/Wave ☐ Cuffs ☐ Crushing ☐ Heat Treat ☐ Wave/Twist in Tube ☐ Marks/Chatter ☐	Temperature/Cure ☐ Set-up ☐ BOM/Route ☐ Broken/Damage/Defect ☐ Inspection Incomplete/Unqualified ☐ Contamination ☐ Countersink ☐ Cut Too Short ☐ Instructions Incomplete/Unclear ☐ Drill Holes ☐	Power Loss/Surge ☐ Folio/Program ☐ Grain ☐ Weld ☐ Wrong Stock Pulled ☐ Out of Sequence ☐ Off-set ☐ Misabeled ☐ Fit/Function ☐ Misaligned/off center ☐	Positioned Wrong ☐ Outside Dimensions ☐ Over/Under tolerance ☐ Part Incorrect ☐ Part Lost/Missing ☐ Part Moved ☐ Drawing ☐ Finish ☐ Misread ☐ Turning Sequence ☐
OTHER : ☐					

DART AEROSPACE LTD		Work Order:	
Description: Skidtube Clevis		Part Number:	D4776-3
Inspection Dwg: D4776 Rev: D		Page 1 of 1	

INSPECTION SHEET

Drawing Dimension	Tolerance	Actual Dimension	Accept	Reject	Method of Inspection	Comments
4.25	+/-0.030	4.252	✓		vern	mm L-05
2.25	+/-0.030	2.250	✓		"	
1.688	+/-0.010	1.689	✓		Height G	31006
0.88	+/-0.030	0.872	✓		vern	mm L-05
0.510	+0.010/-0.000	0.514	✓			
1.063	+/-0.010	1.060	✓			
1.38	+/-0.030	1.380	✓			
0.19	+/-0.030	0.190	✓			
1.00	+/-0.030	1.003	✓			
Ø0.484	+0.006/-0.001	0.486	✓			
0.50	+/-0.030	0.499	✓			
0.55	+/-0.030	0.550	✓			
3.150	+/-0.010	3.151	✓			
1.13	+/-0.030	1.132	✓			
0.688	+/-0.010	0.686	✓		Height G	31006
Ø0.397	+0.006/-0.001	0.399	✓		vern	mm L-05
1.813	+/-0.010	1.813	✓		Height G	31006
R0.19	+/-0.030	.190	✓		RG	
R0.13	+/-0.030	.130	✓		"	
R0.44	+/-0.030	.440	✓		"	
0.125	+/-0.010	.127	✓		vern	mm L-05
0.38	+/-0.030	.380	✓			
0.75	+/-0.030	.750	✓			
R0.25	+/-0.030	.250	✓		RG	

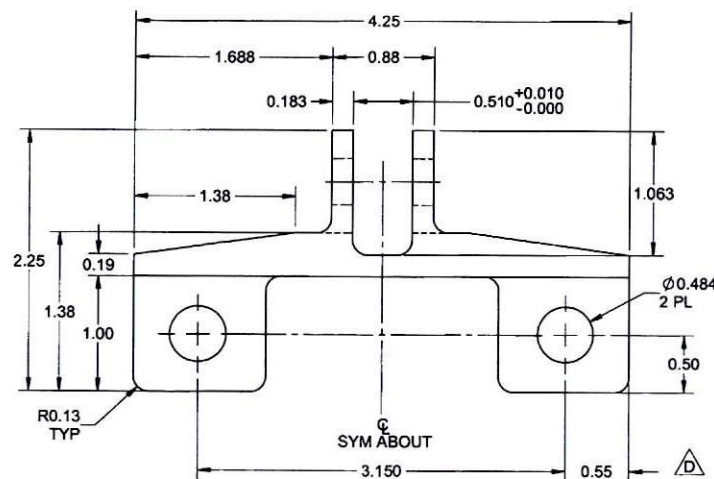
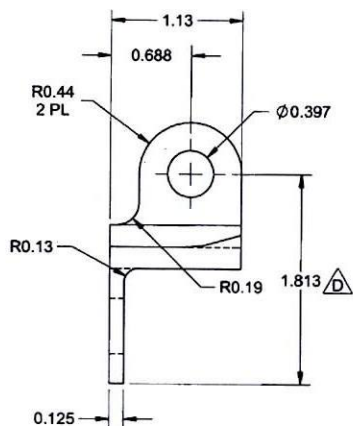
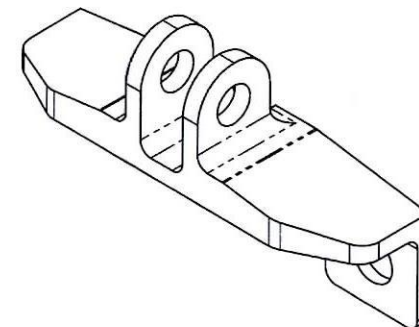
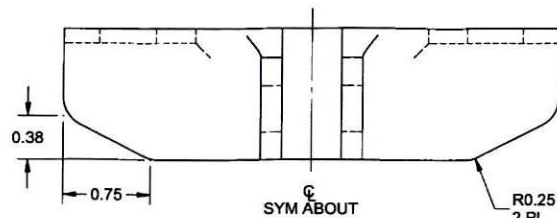
Measured by: <i>mgl</i>	Checked by:	QC Inspector:
Date: 18/03/25	Date:	Date:

Engineering Approval: (If necessary)	Date:
--	--------------

Rev	Date	Change	Revised by	Approved
A	14.08.27	New Issue	KJ	
B	15.02.26	Dimensions revised	KJ	
C	15.11.03	Dimensions corrected per Dwg Rev D	KJ	<i>[Signature]</i>

20180220

SHOP COPY
RETURN TO
ENGINEERING
UNCONTROLLED COPY
SUBJECT TO AMENDMENT
WITHOUT NOTICE
WORK ORDER
NO. 172512



GRAIN
DIRECTION

RELEASED
2014-07-30

NOTES:

- 1) MATERIAL: 6061-T6/T651/T6510/T6511/T62 ALUMINUM BAR
PER QQ-A-225/8 OR AMS-QQ-A-225/8
(OR AMS 4117/4128/4115/4116)
OR QQ-A-200/8 OR AMS-QQ-A-200/8 (OR AMS 4160)
OR ASTM B211 OR ASTM B221
REF DART SPEC M6061T6B
- 2) FINISH: CHEMICAL CONVERSION COAT PER DART QSI 005 4.1
POWDER COAT WHITE (4.3.5.1) PER DART QSI 005 4.3
- 3) TOLERANCES: PER DART QSI 018 UNLESS OTHERWISE NOTED
- 4) UNITS: INCHES UNLESS OTHERWISE NOTED
- 5) BREAK SHARP EDGES: 0.005 TO 0.010 MAX
- 6) IDENTIFICATION: PER DART QSI 044 6.1
- 7) WEIGHT: 0.18 lbs

D4776-3 SKIDTUBE CLEVIS

DESIGN	AJS	DART AEROSPACE LTD	
DRAWN	AJS	HAWKESBURY, ONTARIO, CANADA	
CHECKED		DRAWING NO.	REV. D
MFG. APPR.		D4776	SHEET 2 OF 3
APPROVED		TITLE	SCALE
DE APPR.		BASKET STRUT MACHINED PARTS	NTS
DATE	14.07.14	COPYRIGHT © 2013 BY DART AEROSPACE LTD THIS DOCUMENT IS PRIVATE AND CONFIDENTIAL, AND IS SUPPLIED ON THE EXPRESS CONDITION THAT IT IS NOT TO BE USED FOR ANY PURPOSE OR COPIED OR COMMUNICATED TO ANY OTHER PERSON WITHOUT WRITTEN PERMISSION FROM DART AEROSPACE LTD.	

DQA: _____ Date: _____



WORK ORDER NON-CONFORMANCE / UPDATE

QA Closed: _____ Date: _____

Work Order update only ☐

Work Order: _____ Part No. _____ NCR No. _____	DISPOSITION Rework ☐ Scrap ☐ Use-as-is ☐ Suspected Unapproved ☐	AGAINST DEPARTMENT/PROCESS <table style="width: 100%; border: none;"> <tr> <td style="border: none;">Skid-tube ☐</td> <td style="border: none;">Cross tube ☐</td> <td style="border: none;">Water Jet ☐</td> <td style="border: none;">Engineering ☐</td> </tr> <tr> <td style="border: none;">Machining ☐</td> <td style="border: none;">Small Fab ☐</td> <td style="border: none;">Prod. Eng. Coord. ☐</td> <td style="border: none;">Quality ☐</td> </tr> <tr> <td style="border: none;">Thermoforming ☐</td> <td style="border: none;">Finishing ☐</td> <td style="border: none;">Rec/Store/Packaging ☐</td> <td style="border: none;">Other ☐</td> </tr> <tr> <td style="border: none;">Large Fab ☐</td> <td style="border: none;">Composite ☐</td> <td style="border: none;">Supplier ☐</td> <td style="border: none;"></td> </tr> </table>				Skid-tube ☐	Cross tube ☐	Water Jet ☐	Engineering ☐	Machining ☐	Small Fab ☐	Prod. Eng. Coord. ☐	Quality ☐	Thermoforming ☐	Finishing ☐	Rec/Store/Packaging ☐	Other ☐	Large Fab ☐	Composite ☐	Supplier ☐	
Skid-tube ☐	Cross tube ☐	Water Jet ☐	Engineering ☐																		
Machining ☐	Small Fab ☐	Prod. Eng. Coord. ☐	Quality ☐																		
Thermoforming ☐	Finishing ☐	Rec/Store/Packaging ☐	Other ☐																		
Large Fab ☐	Composite ☐	Supplier ☐																			

Date :	Step #:	QTY Effective :	MRB (QSI042) Approval
Description Work Order Deviation		Disposition	
		Completed By	
		Lead hand / Supervisor Approval Verification	
		QC / QA Coordinator Approval	

Root Cause				FAULT CATEGORY			
Environment ☐	No Re-verification ☐	Pressure/Forced ☐	Temperature/Cure ☐	Power Loss/Surge ☐	Positioned Wrong ☐		
Design ☐	Operator ☐	Bending ☐	Set-up ☐	Folio/Program ☐	Outside Dimensions ☐		
Doc/Data ☐	Offset/Setup ☐	Centre Not Concentric ☐	BOM/Route ☐	Grain ☐	Over/Under tolerance ☐		
Equip/Tooling ☐	Supplier ☐	Cracks ☐	Broken/Damage/Defect ☐	Weld ☐	Part Incorrect ☐		
Handling/Pre ☐	Training ☐	Crimp/Kink/Ripple/Wave ☐	Inspection Incomplete/Unqualified ☐	Wrong Stock Pulled ☐	Part Lost/Missing ☐		
Material ☐	Use for Testing ☐	Cuffs ☐	Contamination ☐	Out of Sequence ☐	Part Moved ☐		
Internal Transport ☐	Poor Information ☐	Crushing ☐	Countersink ☐	Off-set ☐	Drawing ☐		
Tribal Knowledge ☐	Rushing ☐	Heat Treat ☐	Cut Too Short ☐	Mislabeled ☐	Finish ☐		
LOA ☐	Product Improvement ☐	Wave/Twist in Tube ☐	Instructions Incomplete/Unclear ☐	Fit/Function ☐	Misread ☐		
Substation ☐	Process Improvement ☐	Marks/Chatter ☐	Drill Holes ☐	Misaligned/off center ☐	Turning Sequence ☐		
Past Expiry Date ☐	Manufacturing Process ☐	OTHER : _____					
Misidentified ☐	Past Due ☐						